Amendments to the Claims

The following Listing of Claims replaces all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (original): A nanostructure fabrication method, comprising:

forming on a substrate a film including a vector polymer comprising a payload moiety;

patterning the film; and

removing organic components of the patterned film to form a payload-comprising nanoparticle.

Claim 2 (original): The method of claim 1, wherein the vector polymer comprises a number of repeat units each comprising the payload moiety.

Claim 3 (original): The method of claim 2, wherein the payload moiety includes at least one semiconductor atom.

Claim 4(original): The method of claim 2, wherein the payload moiety includes at least one metal atom.

Claim 5 (original): The method of claim 4, wherein the payload moiety includes at least one iron atom.

Claim 6 (original): The method of claim 5, wherein the vector polymer is one of a poly(vinyl ferrocene), a poly (iron III acrylate), and an iron-comprising diblock polymer.

Claim 7 (original): The method of claim 1, wherein the film includes the vector polymer and a polymer binder.

Claim 8 (original): The method of claim 7, wherein the polymer binder contains ligands attracted to the payload moiety.

Claim 9 (original): The method of claim 7, wherein the vector polymer includes polyvinyl ferrocene.

Claim 10 (original): The method of claim 9, wherein the polymer binder includes one of poly(dimethylglutarimide) (PMGI), poly(ethylenimine), poly (vinyl pyridine), poly (vinyl alcohol), poly (ethylene/acrylic acid), poly (acrylic acid) and its sodium salt, poly (maleic acid), poly(dimethylglutarimide), polyamic acid, poly (methyl methacrylate acid), poly (ethylene glycol), poly(propylene glycol), poly(dialkylsiloxane), polysilane, silsesquioxane, and an aluminum-comprising gel.

Claim 11 (original): The method of claim 7, wherein the vector polymer is polystyrene-b-iron-complexed poly(vinyl pyridime) and the polymer binder is polystyrene.

Claim 12 (original): The method of claim 7, wherein the vector polymer is polymethyl methacrylate-b-poly (iron III acrylate) and the polymer binder is polymethyl methacrylate.

Claim 13 (original): The method of claim 7, wherein the forming comprises spin-casting onto the substrate a mixture comprising the vector polymer and the polymer binder in a casting liquid.

Claim 14 (original): The method of claim 1, wherein the vector polymer is a diblock polymer A-B, where A includes multiple repeat units each comprising the payload moiety, and B includes multiple repeat units each comprising C, H, N, and O atoms.

Claim 15 (original): The method of claim 14, wherein the repeat units of B each further includes at least one of a silicon moiety and an aluminum moiety.

Claim 16 (original): The method of claim 1, wherein the film is formed on the substrate with a thickness less than 120 nm.

Claim 17 (original): The method of claim 1, wherein patterning the film comprises applying a photoresist over the film, patterning the photoresist, and transferring the photoresist pattern to the film.

Claim 18 (original): The method of claim 17, further comprising forming a barrier layer between the photoresist and the film.

Claim 19 (original): The method of claim 1, further comprising reflowing the patterned film by heating the patterned film to a temperature above a glass transition temperature of a component of the patterned film.

Claim 20 (original): The method of claim 1, wherein removing organic components comprises removing at least one organic moiety of the patterned film.

Claim 21 (original): The method of claim 20, wherein at least one organic moiety is removed by oxidation.

Claim 22 (original): The method of claim 1, wherein removing organic components comprises converting the payload moiety from a metal species into a salt.

Claim 23 (original): The method of claim 1, wherein removing organic components comprises converting the payload moiety into a non-volatile oxide.

Claim 24 (original): The method of claim 1, further comprising forming at least one carbon nanotube at the payload-comprising particle.

Claim 25 (original): A nanostructure fabrication method, comprising:

forming on a substrate a film including a vector polymer comprising a one or more types of repeat units, at least one of the repeat unit types contains a payload moiety;

patterning the film; and

removing organic components of the patterned film to form respective nanoparticles comprising an average number of payload-moiety-comprising components substantially equal to the number of payload-moiety-comprising repeat units in the vector polymer.

Claims 26-28 (canceled)

Claim 29 (new): A nanostructure fabrication method, comprising:

forming on a substrate a film comprising vector polymers each comprising an inorganic payload moiety;

patterning the film to form discrete regions of the film on the substrate; and

removing organic components of the discrete regions of the film to form on the substrate respective nonvolatile nanoparticles each comprising the inorganic payload.

Claim 30 (new): The method of claim 29, wherein the removing comprises transforming the discrete regions of the film into respective nonvolatile nanoparticles each consisting essentially of at least one of the inorganic payloads.

Claim 31 (new): The method of claim 29, wherein the removing comprises transforming the discrete regions of the film into respective nonvolatile nanoparticles each consisting essentially of a composition of matter that is derived from at least one of the inorganic payloads.